

## IN THE SPECIFICATION

Please replace the first full paragraph on page 3, beginning on line 1 with:

### **Brief description of the accompanying drawings:**

- ~~1. Photographs 1 and 2 of the drawing sheet show field of morphological features of the plants of the present invention at 70 days and 100 days respectively.~~
- ~~2. Photographs 1 and 2 of the drawing sheets No. 2 show the rapid growth of the 'Sambhav' plant and its canopy at 70 days and 100 days respectively.~~
- ~~3. Photograph 1 of the drawing sheet No. 3 shows instar larvae infected individual clones of other plants in comparison with clone of 'Sambhav'.~~
- ~~4. Photograph 2 of drawing sheet No. 3 shows the unique RAPD profile of 'Sambhav'.~~

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows field view of the morphological features of the 'Sambhav' plants at 70 days.

FIG. 2 shows field view of the morphological features of the 'Sambhav' plants at 100 days.

FIG. 3 shows the rapid growth of the 'Sambhav' plant and canopy at 70 days.

FIG. 4 shows the rapid growth of the 'Sambhav' plant and its canopy at 100 days.

FIG. 5 shows instar larvae infected individual clones of other plants in comparison with clone of 'Sambhav'.

FIG. 6 shows the genetic similarity of the new clone 'Sambhav' with other varieties of

*Mentha arvensis*.

FIG. 7 shows RAPD profile of 'Sambhav'.

Page 5, please replace paragraph 2 with:

The overall objective of the invention was not only to develop insect tolerant genotypes but simultaneously also to have a better plant type with high menthol content and herbage yield for better productivity. So, the plant of invention was tested in field trial for oil yield, menthol content and herbage production against the checks (varieties developed by CIMAP). Replicated field trials were conducted following normal agronomic practices by planting multiplied suckers in the month of January, 1998 and 1999 for 2 consecutive years in RBD fashion and different growth and yield characteristics were recorded (Table 1). For field trials 10m X 10m plots were prepared by adding only FYM 1.5 ton per ha. Astonishingly the plant CIMAP/GRB 2-18 was able to out-compete all existing varieties in its rate of growth. It was so rapidly growing that it could cover the inter-row spacing of 80cm completely within a period of 90-100 days, which was not the case of other control varieties taken (~~Sheet # 2, Photograph # 1 and 2~~) (Fig. 2). The plant canopy covered a space of 85 to 90 cm in 110 days in comparison to Himalaya(62-70 cm), Shivalik (50-56mc), Gomti (70-75), Kosi (65-72), Kalka (40-60 cm) and MAS-1(40-50 cm). This was the most desirable advantage to the plant as it produced highest amount of herbage and ultimately the oil and menthol.

Page 7, last paragraph, please replace with

The invention in another embodiment provides a new and distinct mint plant.:

*Mentha arvensis* 'Sambhav' which is covered in a ~~co-pending~~ U.S. Patent Application Serial No.09/482,645 now U.S. Patent PP 14,538 P2.

Page 8, paragraph 4, please replace with:

d. the plant has distinct molecular profile by random amplified polymorphic DNA (RAPD) using 20 OPJ primers and 20 MAP primers distinguishing the plant from the other existing varieties (~~Drawing sheet # 3, Photograph #2~~) (Fig. 7) .

Page 8, paragraph 6, please replace with:

f. the plant has characteristic light greenish leaves, whitish flowers with distinct morphology of single main stem with branches coming out of the lower nodes imparting a shape of up-side down open filled umbrella to the canopy allowing equal distribution of sunlight, thus prevent yellowing and fall of lower leaves (~~Drawing sheet #1, Photograph #1 and 2~~) (Figs. 1 and 2).

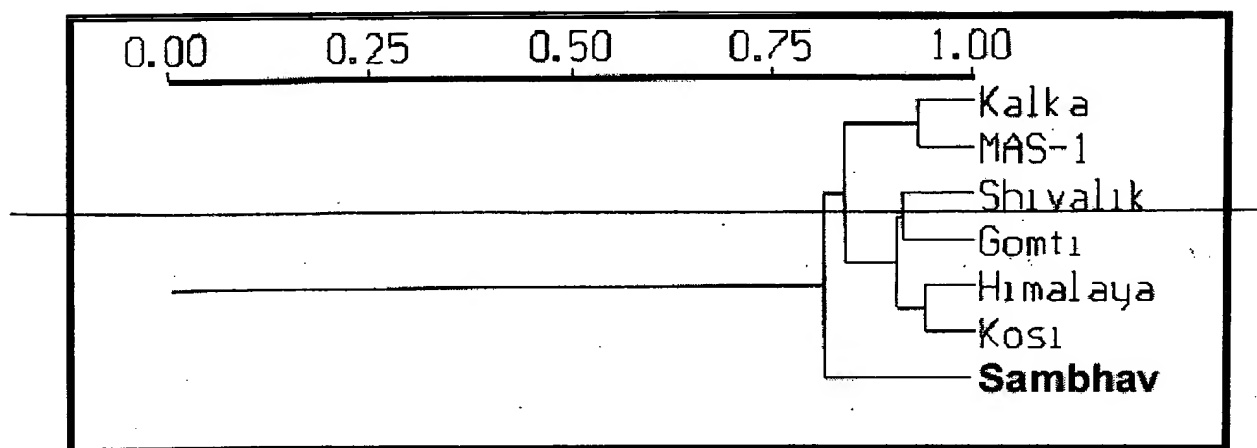
Page 15, first paragraph, please replace with:

varieties. The plant of the present invention was developed by screening molecular variants among somaclones already differentiated as distinct, unique and novel at DNA level. The plant is having desirable morphological and economical traits in a rare unmatched combination and is available only with us in CIMAP. No variation in the RAPD patterns was observed in the analysis of the micropropagated as well as field raised population in successive generations indicating the stability of the genotype. The 20 MAP primers (MAP 01 to MAP 20) with the sequence  
AAATCGGAGC, GTCCTACTCG, GTCCTTAGCG, TGC GCGATCG,  
AACGTACGCG, GCACGCCGGA, CACCCTGCGC, CTATCGCCGC,  
CGGGATCCGC, GCGAATTCCG, CCCTGCAGGC, . CCAAGCTTGC,  
GTGCAATGAG, AGGATACGTG, AAGATAGCGG, GGATCTGAAC,  
TTGTCTCAGG, CATCCCGAAC, GGACTCCACG, AGCCTGACGC and 20-OPJ  
primers (Operon Technologies Inc, USA) were used for the analysis and similarity indices were computed to generate similarity matrix among existing varieties and the plant Sambhav (Table 3). The OPJ primers (01 to 20) were procured from Operon technologies, USA. The MAP primers were used to develop a unique and distinct

RAPD profile (~~Drawing sheet #3, Photograph #2~~) Fig. 7 of the Plant.

Page 16, please replace with:

**Figure 1: Genetic similarity of the new clone GRB 2-18 with other varieties of *Mentha arvensis*.**



From RAPD analysis the profiles were studied and similarity indices were calculated which were put into a matrix. This matrix was used to produce a graphic phenogram by means of UPGMA (unweighed pair group method with arithmetic average) cluster analysis (Figure 1 & 6). As represented in the phenogram the clone of the invention is quite different from the other varieties. The diversity of the genotype of the plant of invention 'Sambhav' is 13%, 28%, 22%, 18%, 17% and 16% from the varieties Gomti, Himalaya, Kosi, MAS-1, Kalka and Shivalik. Highest 28% difference in terms of polymorphic profiles was observed for the genotype of the invention with the parent plant Himalaya from which it was developed as a somaclone. The plant genotype of the invention 'Sambhav' was most similar in terms of polymorphism with Gomti. In total the distinctiveness of the clone in RAPD profiles was established as total polymorphism detected.

Page 18, replace paragraph 6 with:

6. The *in vitro* growing genetically distinct clones were subjected to feeding attack by actively feeding 3<sup>rd</sup> instar larvae by releasing them right in the culture tubes containing individual clones on the rooting medium (~~Drawing sheet # 3, Photograph #1~~) (Fig. 5). Most of the shoots of the clones were eaten away by these larvae within 2-3 days. However, three clones clones (CIMAP/GRB 1-06, 2-18, and 5-15) showed the least feeding by the larvae. In these tubes, only initial bites could be observed and non-feeding was also conspicuous by typical symptoms of no growth in the starved larvae.

Page 19, replace paragraph 8 with:

The new genotype GRB 2-18 named as 'Sambhav' was so rapidly growing that it could cover the inter-row spacing of 80cm completely within a period of 90-100 days, which was not the case of other control varieties taken (~~Drawing sheet #2, Photograph #1 and 2~~) (Figs. 3 and 4). The plant canopy covered a space of 85 to 90 cm in 100 days in comparison to Himalaya(62-70 cm), Shivalik (50-56 cm), Gomti (70-75), Kosi (65-72), Kalka (40-60 cm) and MAS-1(40-50 cm). The herbage yield of plant 2.8 Q per 100m<sup>2</sup> against 1.25, 0.75, 0.50, 0.80, 1.60, 1.70 for Himalaya, Shivalik, MAS-1, Kalka, Gomti and Kosi. Similarly the oil yield was highest (0.85) in the case of the genotype. The genotype though has less menthol percentage, when the total menthol yield per 100 m<sup>2</sup> is estimated by converting the total oil yield per 100 m<sup>2</sup> against the menthol percentage (77 X 1.61 / 100) and it comes to 1.24 kg, which is much higher than other varieties. The menthol yield values for other varieties are 0.68, 0.27, 0.24, 0.52, 0.60, 1.08 kg per 100 m<sup>2</sup> for Himalaya, Shivalik, MAS-1, Kalka, Gomit and Kosi respectively. This was the most desirable

economical advantage to the plant with commercial value as it produced highest amount of herbage and ultimately the oil and menthol per unit area in comparison to other genotypes while being the most tolerant to insect pest attack.